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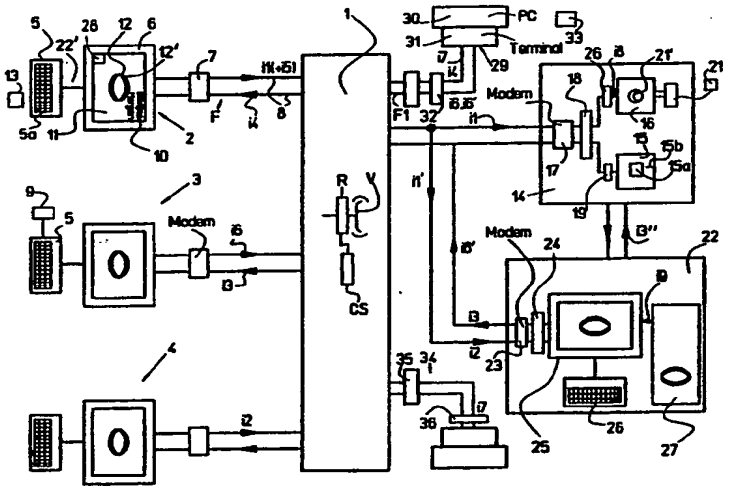

(57) Abstract

An arrangement in a completely automated engraving includes stations (14, 22) for effecting engraving and transmitting out information. The system can include a transmission system (1) to which enquiry stations, shops and so forth (2, 3, 4) are connected. A respective shop or the like is provided with a terminal and display unit (5, 12). The engraving station comprises one or more engraving machines (15, 16). The display information station (22) comprises a computerised equipment in which information about articles to be selected and engraved is stored. The enquiry station can request information from the display information station and convey selection information and information about engraving. A respective terminal at a respective enquiry station can include self-service equipment in which a payment card can be applied for automatic payment for a selected and engraved article. Subscribers connected in the transmission system (1) can access and utilise the engraving and display information functions in the completely automatic engraving system.

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TITLE

ARRANGEMENT IN AN ENGRAVING SYSTEM

TECHNICAL FIELD

The present invention relates to an arrangement in a completely automated engraving system for articles with a preferably curved surface, by which are primarily meant articles in the form of rings. The curved surface in this context consists of the inner surface of the ring.

The engraving system comprises one or more engraving machines to which first signals can be supplied depending on first data relating to the appearance of the engraving, the engraving function and so forth and which are arranged to cause guidance of mutually moving parts contained in the respective engraving machine. The respective engraving machine can in this context be of the type which utilises an engraving element which can consist of an engraving needle, laser head and so forth. By means of the engraving element, engraving or marking is effected on activation of the mutually moving parts. The engraving system also comprises first transmitting or packaging elements for the first signals in order to make possible transfer of the latter from a collecting station via a first connection to a treatment station which comprises the respective engraving machine. Activation of a respective engraving machine can also be effected when the first signals are supplied to or occur at or in the treatment station.

The engraving system also comprises the function that the respective engraving machine can be controlled by means of a computer equipment receiving the said first signals, which computer generates control signals for the engraving equipment in dependence on the first signals.

PRIOR ART

It is already known from the Swedish Patent 8902158-8 to arrange for a centralised engraving function in which a station receives information on the different

appearances of the engravings, articles in question, customer number and others. The station serves as a collection point for one or a small number of large receiving stations or as a collection point for many smaller receiving stations. The proposed arrangement results in advantages in that the collections can be limited in the shops which sell the articles in question which per se frequently consist of economically expensive articles which are to be engraved. The present invention is also a further development of the arrangement according to Swedish patent application 9102640-1. The said patent and patent application also provide examples of engraving equipment which is utilised in the centralised operation and by means of which signals or data transferred to the centre are to result in it being possible to effect the selection of articles and application of engravings onto the articles in a technically/economically advantageous manner.

ACCOUNT OF THE INVENTION

TECHNICAL PROBLEM

The articles in question, which usually consist of gold articles and articles in other noble metals, are coveted by thieves. To utilise a centralised engraving function in a technically/economically effective way implies that articles in large number will be supplied to the station in question. Collection, transportation and an appropriate customer service entail the requirement for exposing the articles coveted by thieves. A customer must first select and order the article and then select an engraving suitable for the customer which, in turn, can be selected from among a large number of patterns. The information has hitherto been transferred thereafter to the centre which effects the production of the article and the engraving function. Previously known methods and arrangements have entailed a handling which, from the point of view of time has burdened the customer who often had to visit the shop several times in order to make his

selections, orders and collection of the article in question. There is a distinct requirement for the involvement of the customer in his or her purchase of the article to be simplified, at the same time as the exposure of the goods coveted by thieves can be kept to a minimum. The invention intends to solve this problem, among others.

In connection with the novel arrangement, a contact network is utilised which is preferably established over the general telephone network. The shops in question can connect themselves to this network, as can order-receiving stations and engraving stations. The invention per se also functions in the case where one or a small number of the connections utilise a diskette transfer function or corresponding function. A further object of the invention is to produce a technically/economically advantageous system for handling engraving and articles via a telephone network.

According to the invention, terminals for introducing information such as selection of articles, choice of engraving pattern and so forth are utilised in a respective shop. It must be possible to connect other equipment, integrated with this terminal or separately in relation to this terminal. The invention also utilises the characteristic that a station provided with information, which is connected to the transmission system, can be activated for transmission to the said terminal or equipment of a signal notification which is indicative of the article structure, engraving pattern and so forth. The invention has the object of solving these problems as well.

The terminals in the shops or the like must in turn be connectable to subscribers or extensions included in the transmission system. It must be possible for the said first signals to emanate from signals which are extracted from these last-mentioned subscriber or extension equipments which must be capable of including terminals for introducing selection information and engraving

information. The said terminals must also be able to include identification-receiving cards or corresponding elements which must constitute means of payment for the service in question. It is the object of the invention to provide also for this function.

In principle, the engraving station can include a presentation information station. The last-mentioned stations can be separated and situated at different places. The stations must be able to communicate via the transmission system or directly. The invention also undertakes to solve this problem.

THE SOLUTION

That which can be mainly considered to be characterising of an arrangement according to the invention is that the collecting station or shop is provided with other packaging or transmitting elements which can be common with the first packaging or transmission elements mentioned in the introduction. The said second elements are used for transferring the said second signals via a fast-reaction second connection which can be included in the transmission system or constitute a separate connection in relation to the latter, for example in the shop or the like. The second signals are transferred to a second receiving station or receiving unit which can be common with a station which is separate in relation to the collecting station and can be located, for example, in the shop or the like. The second signals can be supplied at the receiving station or receiving unit to activating or selection circuits for activating or singling out information which relates to surfaces which include or differ from one or more engravings or marking surfaces selected on the article, or the article in its totality. The information thus activated or singled out can be transferred via the second connection in dependence on the receipt of the second signals in the receiving station or receiving unit. The said selection or singling out brings about the creation of third

signals which are supplied to the second connection or a third connection and from which respective connection the third signals can be extracted. The third signals can be input as activating signals for or information-containing signals to a unit in the collecting station or corresponding unit. The third signals cause the said surfaces which include or differ from the said selected engraving or marking surfaces to be representable at the receiving station or receiving unit. The representation can be effected on a high-resolution display unit, high-resolution television set and so forth which provides a very detailed and clear image of the surfaces in question, engraving patterns and so forth. As an alternative, the invention is characterised in that the collecting station is accessibly arranged via an information-transferring system which preferably includes quick-reacting fourth connections, preferably telephone connections which can be of the dialable or pre-established type. The said first signals are in this context brought about by fourth signals which consist of signals related to article and/or engraving information and which can be transferred on the fourth connections to signal-receiving elements at the collecting station. The said receiving elements are arranged to effect, after possible buffer storage, the said first signals together with related information which has possibly also been transferred to the collecting station, which information can consist of identification information and/or information which complements the article and/or engraving information provided. The fourth signals are extractable by means of terminals connected or connectable to the transmission system, preferably subscriptions connected to or included in the telephone system, which include initiation and transmitting elements for the fourth signals in dependence on selecting or choosing article and/or engraving information accessible at the terminals. The latter information can be transferable via the transmission

system, for example via a fifth connection, from the said activated or singled-out information.

In further developments of the concept of the invention, engraving- or information-providing stations are arranged in mutual connection with one another. A call to an information-providing station over a connection involves connecting together the collecting station and the information station and reading out current information from the memory of current information of the information station, which in this manner becomes displayable at the collecting station. Establishing a connection between engraving- and information-providing stations can be carried out with permanent connections or switched connections via the transmission system/telephone network. The shops can thereby be provided with memory capacity which makes it possible for the display information to be transferred and stored in the respective shop separately from the transmission of engraving information. Shop equipment with information transferred in this manner can thereby be considered as one unit in the interaction with the customer's selection and determination of article and engraving pattern. All engraving styles can be presented separately on or applied to the respective article surface with a view to facilitation for the customer/shop. The article, patterns and so forth can be arranged displayably on the display unit in question, which can provide different perspectives and views of the article with or without engravings.

In one embodiment, a call to the transmission system brings about connections of the different equipment and stations involved. When the telephone system is utilised, the respective subscriber installation is provided with automatic answering elements for receiving calls. The answering element connects (an) outgoing line/lines to respective internal circuits of the equipment in question. Transferring information from one equipment/station to another

equipment/station entails automatic initiation of information and engraving data in question and is coupled to the selection made by the customer.

Further embodiments of the invention include that one or more of the said information-providing or information-desiring equipments are provided with scanning equipment for an article and/or engraving appearance or engraving subject on or with which the article is intended to be applicable. Moreover, one or more of the ordering equipments can be provided with elements which can receive payment card or identification card information, into which the respective card be input for payment or identification in or via the transmission system/telephone network. An element can be included in the latter as a subscriber connection or access connection for validation of payment information following the utilisation of the card in this connection. The said unit can be actuated by means of signals which represent validation and payment information and are extractable from the transmission system.

In a further embodiment, signals/information which are transferred in a different transmission period from the engraving information can be extracted from the transmission system utilised. Article-related signals/information can consist of difference information between an information transmitted in a first period of time and information transmitted in a second period of time. This has advantages in the reproduction of moving information on the displaying equipment in that the information transmitted for each image or the like does not need to be represented with the complete image content or corresponding content.

ADVANTAGES

The equipment specified above provides a number of advantages which are of decisive significance in a completely automated engraving system. The whole system can be made to be customer oriented, that is to say the

selecting functions can be brought out to the customer who can carry out his purchase quickly and unambiguously and without long time delays between the occasion of ordering and the occasion of collecting. The system also is of advantage to units/shops selling expensive articles in that the entire article handling process can be characterised by a low exposure function even though the process includes an engraving function. Today's modern automated engraving machines can operate with great speed and produce engravings of a large number of articles within short periods of time. The demonstration function combined with the engraving function entails that the collections out in the shops can be limited in number and that the different parts of the collection can be provided with copied articles of cheaper material. It can also be noted that the exchange of articles in current collections occurs with a fast changeover. Transport and exposure can thus be limited by means of the invention. Special offers within a chain of shops, wholesaler and so forth can be distributed out quickly to the shops and reach the customers with immediate effect and different articles can be sold as special offers within a short time frame. The invention thus entails a significantly simplified tactical handling of sales in their totality.

LIST OF THE FIGURES

In the text which follows, an embodiment of an arrangement, proposed for the present, which exhibits the characteristic features significant of the invention will be described with simultaneous reference to the attached drawings, in which:

Figure 1 shows in diagrammatic form an example of the configuration of the equipment involved which is connected to a transmission system utilising a telephone network, for example the Swedish public telephone network,

Figure 2 shows in diagrammatic form the equipment in a treatment station, in which information with

respect to surfaces on articles, articles, engraving patterns and so forth can be extracted and transmitted out via the transmission system according to Figure 1, and

Figure 3 shows in diagrammatic form a shop-related equipment which can be actuated internally and coupled together with optional subscribers in the Swedish public telephone network.

DETAILED ILLUSTRATIVE EMBODIMENT

In Figure 1, a telephone network, for example the Swedish telephone network, is indicated by 1. The network has in a manner known per se a register R and a selector V which, in association with a call in the network, bring about through-connections between the different subscribers/ extensions of the network. The telephone network can be analog or digitised and, in the last-mentioned case, a central data processor CS of a type known per se is specified. A number of shop or sales stations 2, 3 and 4 are connected as subscribers in the telephone network. The respective stations can act as collecting stations and can be made identically or with different equipments, all depending on the function, configuration and so forth of the shop. The respective shop has a terminal 5 for registering an engraving function, a screen 6 of the high-resolution type and a modem 7 for connection of the equipment to one or more lines 8 to the telephone network. Different customer-related data can be input using the terminal. Thus, for example, the owner of the shop or the customer himself can input information on measurements, for example ring measurements, of the article he wishes to purchase in the shop. The terminal 5' can also be provided with a scanning equipment 9 in which, for example, the customer's finger in question can be visually scanned. Information on different engraving styles 10 to be applied to the article in question, for example a ring, can also be input in the terminal. Said terminal 5 is in

contact with an outgoing line 8 either directly or via the display unit 6. The terminal 5 can be initiated for displaying the article in question on the screen 11 of the display unit 6. Different engraving styles can also be specified on the said screen. Partial enlargements of the article can also be shown on the screen, with the engraving inlaid on the curved surface in question on an article 12, which can consist of a ring where the curved surface can consist of the inner surface 12' of the ring. Articles of different appearance can occur and the article can also have flat surfaces which are to be provided with engravings, markings and so forth. In the figure, information from the terminal unit 5 which concerns engraving-related information, is reported by signal i1 which is sent out on the line via the transmission system 1.

The respective subscriber arrangement is provided in a manner known per se with automatic ringing systems intended for calls in the transmission system 1. Apart from providing data relating to engraving, the terminal 5 can also be used for initiating an enquiry about the appearance and presentation of the article on the screen 6. Such an initiation entails that second signals i2 are sent out over the line on the transmission system. The terminal can also receive signals which represent display signals about the article, engraving style and so forth. These display signals are here called third signals and have been designated by i3. The said signals i3 are utilised as initiation-displaying or information-displaying signals on the screen 6. All communication takes place via the modem 7 and the communication in the transmission system takes place serially and at least partially digitised in the case shown. In the figure, signals i5 have also been specified which can be added to the first signals i1 and are related to further information, for example identification information, customer information and so forth. The respective terminal in the shop can also be provided with an element

5a receiving card identification or another identification. These elements can be constructed of a type known per se. A person utilising the terminal or equipment can identify himself in the system by means of the card identification, in accordance with the text below. The card 13 can also consist of a so-called payment card by means of which payment for goods in question can be effected in the system. The card causes signals i6 to be conveyed out in the transmission system like the other signals.

A centralised engraving station 14, which comprises one or more engraving machines 15, 16, is also connected to the transmission system. The connection is done via a modem 17 in this case also. The engraving station is provided with automatic answering elements 18 of a type known per se. The engraving station can receive in a likewise known manner the said first signals i1 which serve as engraving information signals. These engraving information signals are supplied to control equipments 19 and 20 for the engraving machines. The control equipments which can be computerised receive the said signals i1 and convert them to control signals i8. The control signals i8 bring about feeding-in or production of completed articles 21 in the engraving machine and this process can also be automnated to a high degree. With the aid of the said control signals i8, the respective engraving machine carries out the engraving based on the control signals, which engraving can be carried out in a manner known per se on articles thus fed into the engraving machine. The selected and engraved article 21' is removed from the engraving machine, for example in an automated process, packaged for delivery to the customer/shop and so forth.

A station containing display information is also connected to the transmission system 1 as a subscriber in the transmission system. Alternatively, the display station 22 can be connected in parallel or integrated with the engraving station. In the case shown, a signal

exchange exists between the engraving and display information stations. The engraving information can be input alternatively or in a complementary manner via the display station 22 to the engraving station 14. The alternative input route is shown by the signal i1'.

Requests for transmission from the display station 22 of information relating to articles, engraving styles and so forth takes place using the said signals i2. These signals are received via a modem 23 and the display information station 22 also has automatic answering elements 24 which here are complemented by possible calling elements which can be considered to be included in the element 24.

The display information station includes a computer 25 and a terminal 26 for manually inputting display information, order receipt and so forth. In addition, a scanner equipment 27, in which the article in question can be visually scanned, is included in the case shown. Information about the visual scanning is indicated by i9 and is transferred to the computer 25. The received signalling i2 can be utilised as singling-out information of a certain information, about a current article or articles, input into the station 22. The signals i2 are also utilised as activation signal for reading out information concerning the article in question or engraving information. The reading out causes generation of signals i3 which are sent out on the outgoing line in the transmission system. The said line can be the same line which receives the signals i2, or another line. Requests for display information can take place in two steps. In a first step, the enquiry is put in at station 22 after which clearing occurs in the element 24. When the station has processed the received information, the enquiry station in question can be automatically called and the signals i3 sent out to the enquiry station via the telephone network. The enquiry and the information provision can thus occur on different occasions. The information station 22 can also routinely transfer

information to the shops 2, 3, 4. This transmission can take place, for example, once per day, once per week and so forth. The shops 2, 3, 4 can in this context be provided with memory capacity, i.e. memories 28, in which the transmitted station is stored while waiting for internal use in the enquiry station/shop. Signals which correspond to the said signals i2 can in this context be sent out internally within the enquiry station. The said signals have been designated by i2' in the figure. Engraving information i1'' is transmitted to the engraving station in routine cases in dependence on orders from the enquiry station, and so forth. The engraving station can communicate bidirectionally with the station 22 for exchange of information.

The system also includes that other subscribers 29, which consist of conventional subscribers within the transmision system, can be connected via the transmission system. These subscribers 29 can enter the system and enquire for information about engraving and articles and order articles and engravings in a corresponding manner to that which has been described. A respective subscriber 29 connects himself in a conventional manner to the respective shop, enquiry station and so forth 2, 3, 4. The subscriber 29 can call up appropriate information on a screen 30 and can likewise carry out ordering or enquiry work on his terminal 31. The display unit 30 and the terminal 31 can consist of a conventional personal computer equipment. In this case, the subscriber is assumed to have conventional calling capabilities 32. The terminal can also include a payment-card facility, which entails that the subscriber with a card 33 which can be applied to the terminal 31 can pay for a selected and engraved article. The signals initiated by the subscriber 29 in connection with the order are shown by i4 whilst desired article and engraving information is illustrated by signals i6, i6'. The subscriber 29 can also obtain information directly from the station 22, compare the signals i6'. A unit for validation of a card or

payment-card information reception is included as a subscriber. This equipment is constructed in a manner known per se and, like the remaining equipment, is provided with a modem 35 and answering element 36. The equipment will not be described in greater detail.

Figure 2 shows in greater detail the station equipment of current interest in the station 22. The station equipment includes a memory 37 in which information on the article can be stored. The memory has a relatively large capacity which, in the present case, is 200 Mb. A printer is designated by 38 and the connection between printer and memory by 39. The scanning equipment 27 can be constructed of a type known per se for scanning images or drawings of a ring, bracelet, cup or other article with curved or plane surfaces. The terminal equipment 26 is constructed of conventional type. The station equipment also includes a communication card 40 by means of which the communication via the telephone connection 41 can be effected. The modem 23 can be constructed of a type known per se. The computer 25 is also of a known type and is provided with a screen for use when storing information in the memory 37. On the screen of the computer, a ring-shaped article is designated by 42. The connection to the engraving machine is shown by 43.

Figure 3 shows an example of equipment in a shop or selling point. On the screen, articles 44 of different type can be shown in different views 44, 44'. Measurements can also be specified in plain text. Measurement ordering, inputting of text which will be engraved, inputting the name and address of the person ordering and so forth are symbolised by 45. The possibility of showing different styles is shown by 46. Where self service is included and payment is to be made by credit card or payment card 13, the card reader 5a is utilised. The terminal 5 is used for typing the engraving function. The TV screen is constructed of a high-resolution screen of known type which provides good

visual images of the respective article and other information. The computer can be arranged for displaying the article in different perspectives following one another (moving images). The transmission of the image material from the display station 22 can take place in reduced volume in the case of displaying moving images. Only the differences between the different images in the movement schedule are transmitted which considerably reduces the information transmission volume. In this case, too, a communication card 47 is utilised which provides for the sending-out of information from the subscriber station 2 via the transmission system in a serial manner. The modem 7 is of a type known per se and comprises digital/analog conversion so that the internal processing can be done completely digitally. This also applies to the stations 14 and 22 and other selling stations and to subscribers in the system which can be connected to these stations and the station 22. The communication card 47 (which also applies to the card 40) can comprise a microprocessor and ROM memories connected to it, compare 47a, 47b. These ROM memories can consist of fixed programs. The memories serve as working memories and a clock, transmitter and receiver circuits for a decoder, and so forth, not specially shown, can be connected to the CPU. The communication cards can be constructed in a manner known per se.

The invention is not limited to the embodiments shown as examples in the text above but can be subjected to modifications within the scope of the following patent claims and the concept of the invention.

Figs. 4a-4f disclose in sections and details a machine for bordering or frame/work mounting of jevellery, for example diamonds in rings, on bracelets, plates, etc. In the front section of Fig. 4a it is disclosed a slide 48 displaceable in the directions of arrows 49. The slide supports a tool holder 50 and is driven by a motor 51. The holder supports a tool interactactable with an article 53,

for instance a ring, which is attached for example on an expanding device 54. The expanding device, and the article, is displaceable in the lontidudinal directions, see arrows 55, in a bearing 56. The article supporting device 54 is journalled in bearing 56 so it can be turned as well, see arrows 57. The longitudinal movements 55 are effected by means of motor 58 which actuates a screw 59 and a nut device 60. The nut device effects the longitudinal movements on the supporting device via a bar 61. The turns 57 is effected by a motor 62 which transfers motions of rotation to a turnable unit 63. The latter one effects via a conencting 64 a turnable member 65 which in turn effects the motions 57. A slide, not discolsed, for effecting for instance linear movements and is upholding articles having straight or flat surfaces, which are to be worked or processed, can be attached to the equipments. Then, a guide and support device 66 is used a bearing member, on which the mentioned slide is displaceable (perpendicular to the paper plane of Fig. 4b). A driving wheel is applied on the member 54. The driving wheel moves the slide in dependence of the motions 55 and 57. The article attached to the slide will then be moved as well. The support device can be expanded by menans of screw, rubber bubble, etc. The tool holder allows rapid exchanges of tools in a way known in itself. The exchangeable tools can constitute drills 67, cutters 68, scribe awls 69, etc. The machine is characterised in that a support member for an article is actuable by means of devices which effect longitudinal and rotary motions 55 and 57, respectively, and that a tool holder can be actuated towards and from the article(-s). Motors 51, 58 and 62 are controlled by means of a dator 67 or the corresponding equipment. The machine can work independently of the above system.

It is important to be able to rapidly set or decide the positions of the tool in relation to the surface which is to be worked or processed, be provided with a jewellery, etc. It is proposed to use a gauging equipment or measuring device 68 having a contact member or function 69 for controlling a program in a dator (mikrodator) 67. The position of the tool is disclosed with 70 and the position of a surface of an article, which is to be treated, is disclosed with 71. A portion 68a of the device 68 is put on the surface 71 and the tool is actuated to press against the surface with the portion 68a positioned in between. When the pressure is available, the mentioned contact function is actuated or disactuated and a control signal is generated and used as imput to the dator, which then is able to use the information of the present value for the distance or gap between the tool and the concerned surface in its processing operation. Thus, it is not necessary to set or decide the positions of the tool and the surface separtely, which is time consuming and make the program complex in itself. The mentioned setting principle can be used in a general sense, even in numerical-controlled machines. The dator receives signal(-s) ia from the device 68 and identifies the gap a by means of the signal(-s) ia. In dependence of the gap a, the dator generates control signals ib, ic and id to the motors 51, 58 and 62. In a preferred embodiment identifications are made, by means of microscope or lighting spots, of the position of the diamond or the corresponding piece on the article/ring 53. By means of actuations (for examples of buttons) on the terminal set 67a the position of the diamond is identified and data of the diamond (as diameter, height, shape, etc) are provided to the dator. The position(-s) can be disclosed on the display unit and the data programming can be started in a known way. It is easy for the operator to identify the best position of the diamond or the corresponding piece. After that the milling, drilling, etc. can be executed by means of the operator's programming or read in process related to the co-ordinates of the tool(-s) and the article surface.

PATENT CLAIMS

1. An arrangement in a automated engraving system for articles having an engravable surface, and utilising one or more engraving machines (15, 16) to which first signals (i1) can be supplied which are dependent on first data relating to the engraving function and which are arranged to result in control (i8) of mutually moving parts (15a, 15b) included in a respective engraving machine, some of which consists of an element, for example engraving needle (15b), by means of which engraving/recessing or marking can be effected on activation of the mutually moving parts, in addition to which on the one hand is included a first transmitting or packaging element (5) for the first signals (i1) to enable these to be transmitted from a collecting station (2, 3, 4) via a first connection (F) to a treatment station (14) which includes a respective engraving machine (15, 16) and at which the activation of the respective engraving machine can be effected with the first signals (i1) being supplied or occurring at the treatment station (14), and on the other hand the engraving machine or respectively the engraving machines can be controlled by means of a computer (20) receiving the said first signals, which computer generates control signals (i8) for the engraving equipment in dependence on the first signals, and on the third hand the mentioned first transmitting or packaging element (5), alternatively second packaging or transmitting elements, is/are adapted to transfer second

2. Arrangement according to Claim 1, characterised in that the engraving- and information-providing stations are in mutual connection with one another and/or that the transmission on one or several lines of the said lines is serially and possibly completely digitised.

3. Arrangement according to Claim 1 or 2, characterised in that a call to the information-providing station (22) over a connection entails the coupling together of the collecting station and the information station and reading out appropriate information from the memory (37) of the information station or camera equipment of appropriate information which in this manner becomes displayable on the display unit of the collecting station, preferably in the form of a display unit, TV, and so forth.

4. Arrangement according to any of the preceding claims, characterised in that all engraving styles (10) can be presented separately on or applied onto the surface of a respective article.

5. Arrangement according to any of the preceding claims, characterised in that the article can be displayed in its totality on the display unit, TV screen and so forth at the collecting station (2, 3, 4) and can be turned on the screen for showing different perspectives and views (44, 44') of the article with or without engraving.

6. Arrangment according to any of the preceding claims, characterised in that the engraving station (14) can be dialled up over a telephone network (1) for coupling together the collecting station and engraving station and for transferring engraving data to the engraving station.

signals (i2) via aquick-reacting second connection which can consist of or being aparted from the first connection (F) to a second receiving station (22) or receiving unit (12), in which the second signals (i2) can be supplied to activating or selecting circuits (25, 27) for activating or singling out information, and on the fourth hand the mentioned activating and singling out information causes from the second connection, or third connection(-s), extractable third signals (i3) which constitute effectuating signals or information-containing signals for a display unit, characterised in that the mentioned activating or singling out information, respectively, is related to surfaces, which contain or differ from one or more engraving/recess or marking surfaces, or alternatively the article in its entirety, in that engraving (recessing) information, eventually together with further information about the article(-s), by means of fourth signals (i4) is transferable to the presentation unit of the concerned collecting station, in that the selection or option of article, engraving/border or another article related information can be carried out at the concerned terminal set and decide(-s) the contents of the first signals in order to attain the automated engraving (recessing) operation and to this operation realated article production, in which a customer activily can take part.

9. Arrangement according to any of the preceding claims, characterised in that one or more of the said information-providing or information-requesting equipments are provided with scanning equipment (27) for an article and/or engraving or subject, on or at which the article is intended to be applicable and/or that one or more ordering equipments are provided with elements receiving payment-card information or identification-card information (13), to which respective cards are suppliable for reading in connection with payment or identification procedures via the transmission system, to which is connected a unit (34) for validating the card and receiving payment data in connection with the use of the card in the last-named elements, which receiving unit can be activated by means of signals (i7) which represent validation and payment information.

10. Arrangement according to any of the preceding claims, characterised in that information (3) extracted from the transmission system occurs in connection with the transmission of engraving-related information (i1) or on a different occasion which is earlier than the last-mentioned transmission, and/or that article-related information (i3) consists of difference information between an information transferred in a first stage and an information transmitted in a second stage which can quickly follow the first stage, whereby the said transmitted information can be reduced, for example when specifying moving information in the receiving equipment.

7. Arrangement according to any of the preceding claims, characterised in that the information-providing station (22) can act as receiver for the engraving function, and that the information-providing station is arranged to transfer the said engraving function and selected information about the article to the engraving station, in which production or selection of the chosen article thus takes place, the article is input in the respective engraving machine, and the engraving information is loaded into circuits controlling the engraving function.

8. Arrangement according to any of the preceding claims, characterised in that, for establishing one or more of the said connections (F, F''), initiation of the transmission system entails a call within it to a register (R) and equipment which is arranged to control the selector equipment (V) in the transmission system (1) in dependence on a call for forwarding to a subscriber or access number which is subscribed to by the collecting and/or treatment stations (14, 22) which are arranged with answering elements (18, 24) for receiving the call, that the answering element connects a line (lines) included in the subscription to the information-providing element in the treatment/engraving station, that sending-out of information can be initiated and transferred on a connection connected through or through-connectable in the transmission system, that the information caused by the treatment or engraving station and initiated via the transmission system as a result of information-provision from the treatment station or engraving station gives rise to signals which can be extracted at the respective receiving terminal and which can be used for starting or effecting signal treatment in the collecting station, which signal treatment actuates information-displaying elements in the collecting station or terminals/subscribers (29) in turn connected to this station via the transmission system.

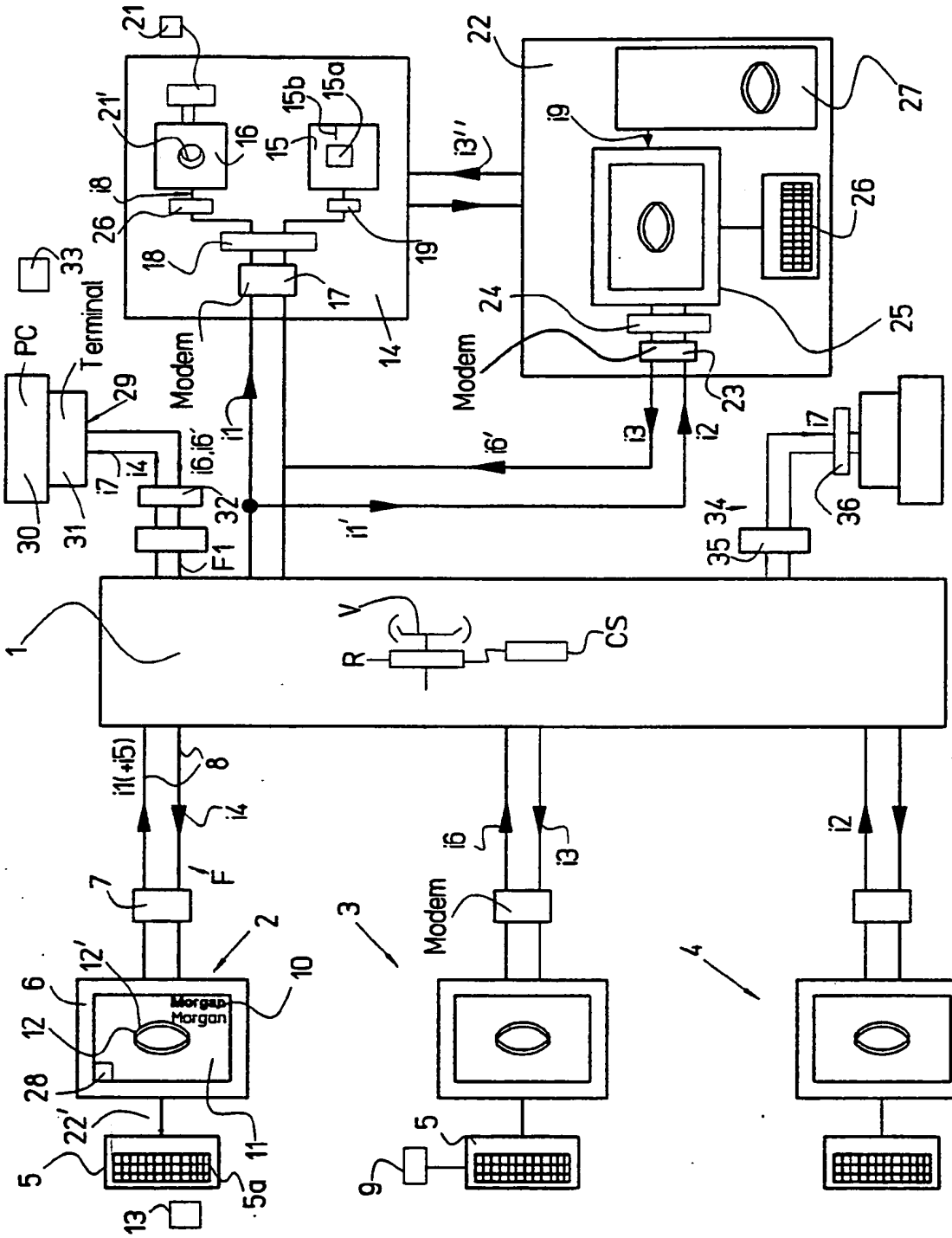

Fig 1

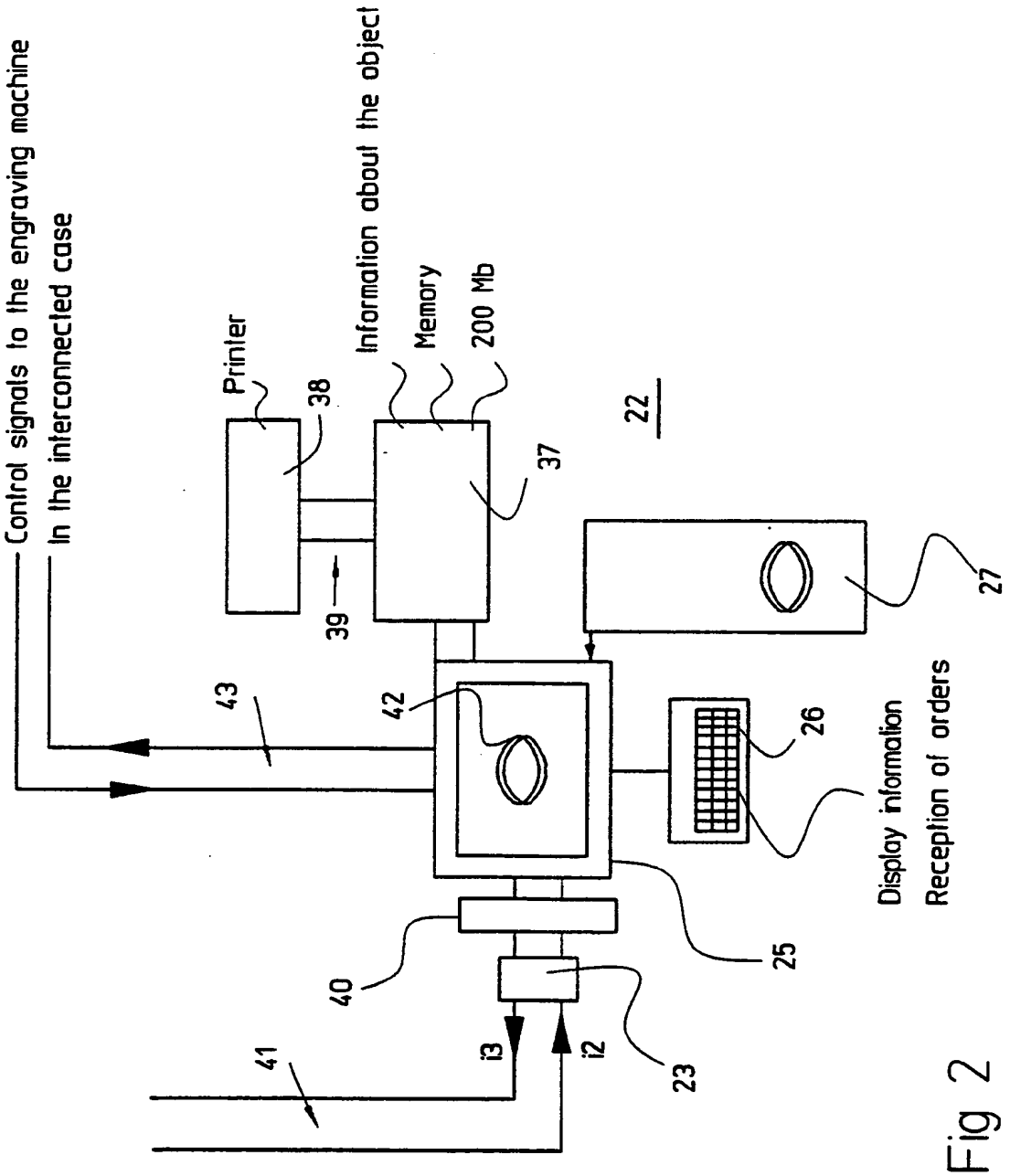
Control signals to the engraving machine
In the interconnected case
Information about the object
Memory
200 Mb
Prinler
38
37
22
27
39
43
42
26
Display information
Reception of orders
25
40
41
i3
i2
23

Fig 2

3/4

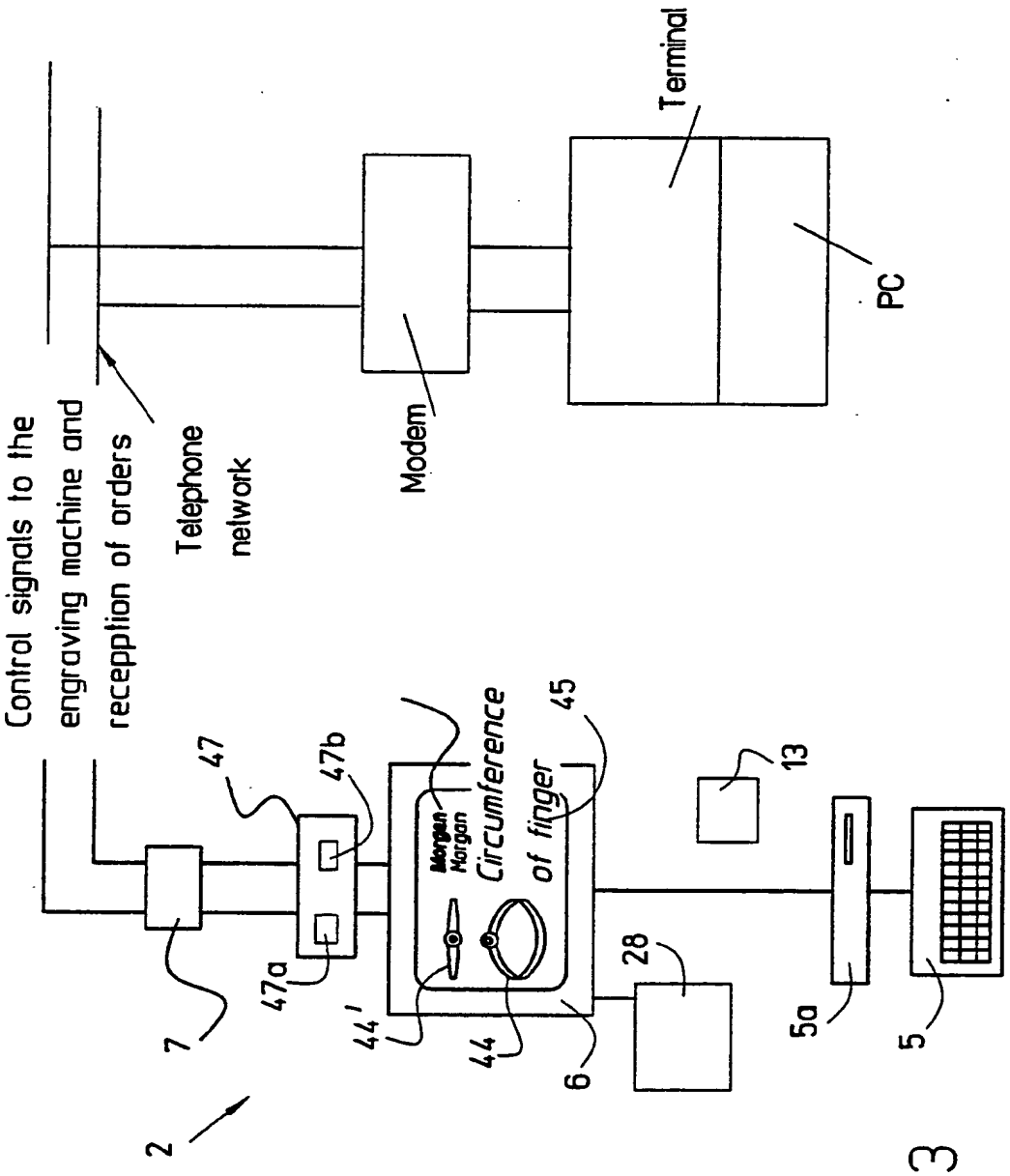

Fig 3

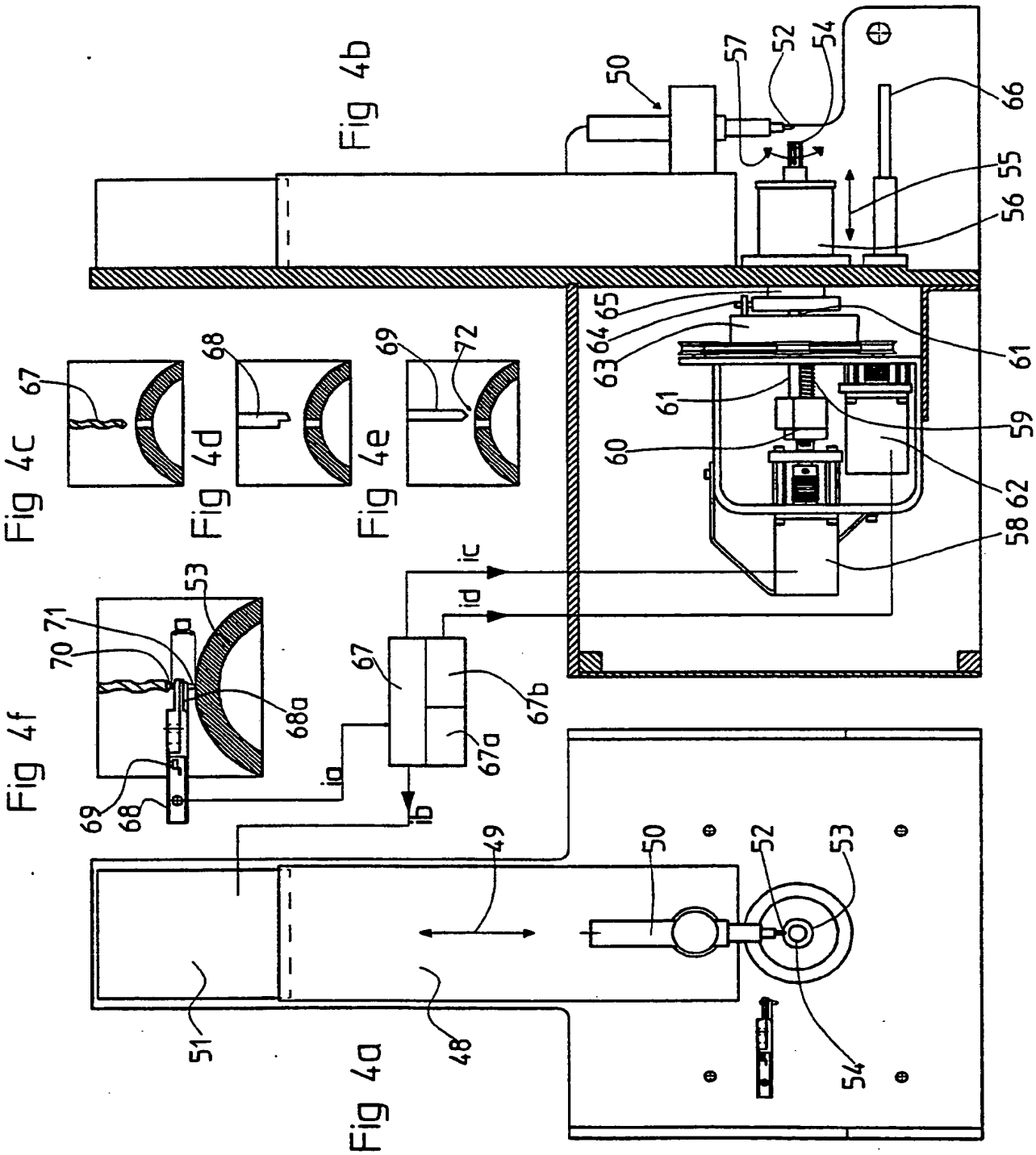
Fig 4b
Fig 4c
Fig 4d
Fig 4e
Fig 4f
Fig 4a
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59
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58
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68
69
72
53
71
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68a
ia
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67a
67b
49
48
51

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 93/00265

A. CLASSIFICATION OF SUBJECT MATTER

IPC5: G06F 15/24, G06F 15/46, G05B 19/18
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC5: G06F, G05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DIALOG: 340,350,351

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO, A1, 9015723 (AB AUTOENGRAVING), 27 December 1990 (27.12.90), page 6, line 2 - line 26, figure 1 --	1-10
A	US, A, 4437150 (WILLIAM V. DAHLGREN JR. ET AL), 13 March 1984 (13.03.84), column 6, line 49 - column 7, line 11, figure 2 --	1-10
A	US, A, 4839829 (HENRY B. FREEDMAN), 13 June 1989 (13.06.89), column 1, line 10 - line 41, figure 1A --	1-10

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"B" erlier document but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
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"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 June 1993	06 -07- 1993
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Katarina Fredriksson Telephone No. +46 8 782 25 00

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE 93/00265

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP, A1, 0446500 (GOROG, JONATHAN M.), 18 Sept 1991 (18.09.91), column 2, line 58 - column 4, line 3, figures 1,7	1-10

INTERNATIONAL SEARCH REPORT

Information on patent family members

28/05/93

International application No.
PCT/SE 93/00265

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO-A1- 9015723	27/12/90	CA-A- 2058773	16/12/90
		EP-A- 0477266	01/04/92
US-A- 4437150	13/03/84	AU-A- 8529882	24/11/82
		EP-A- 0077397	27/04/83
US-A- 4839829	13/06/89	NONE	
EP-A1- 0446500	18/09/91	US-A- 4947028	07/08/90